

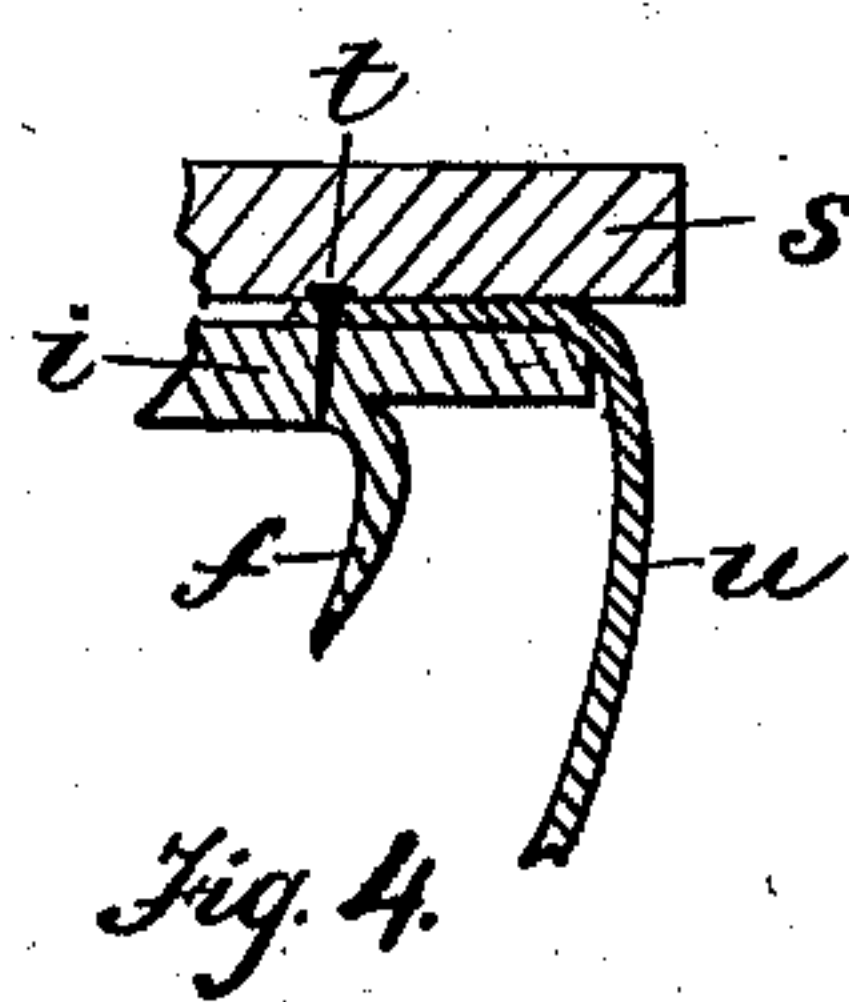
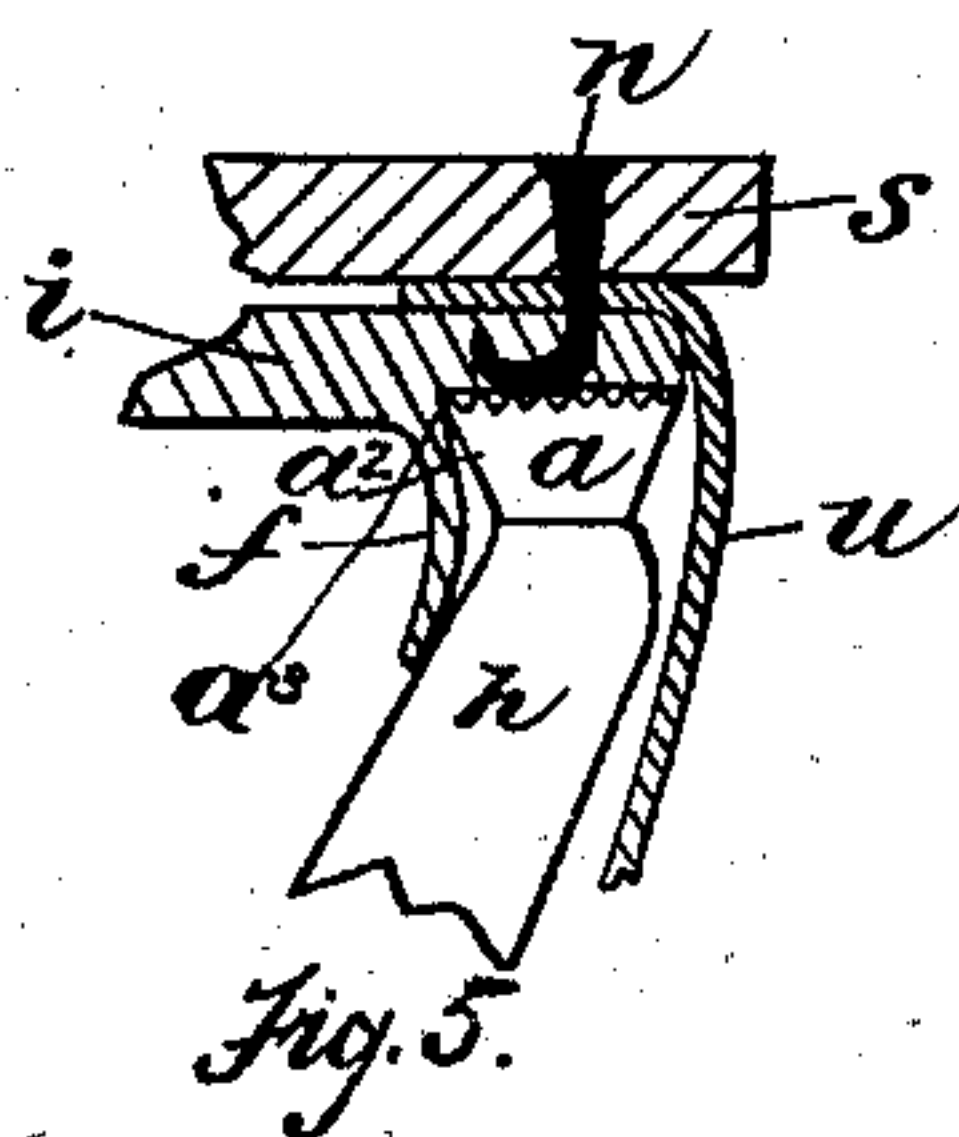
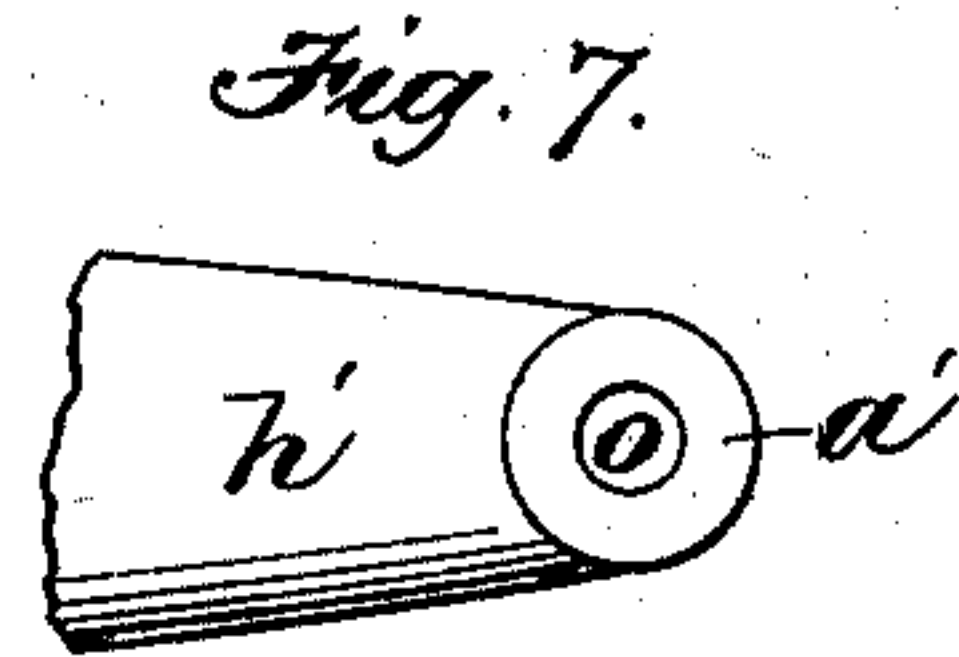
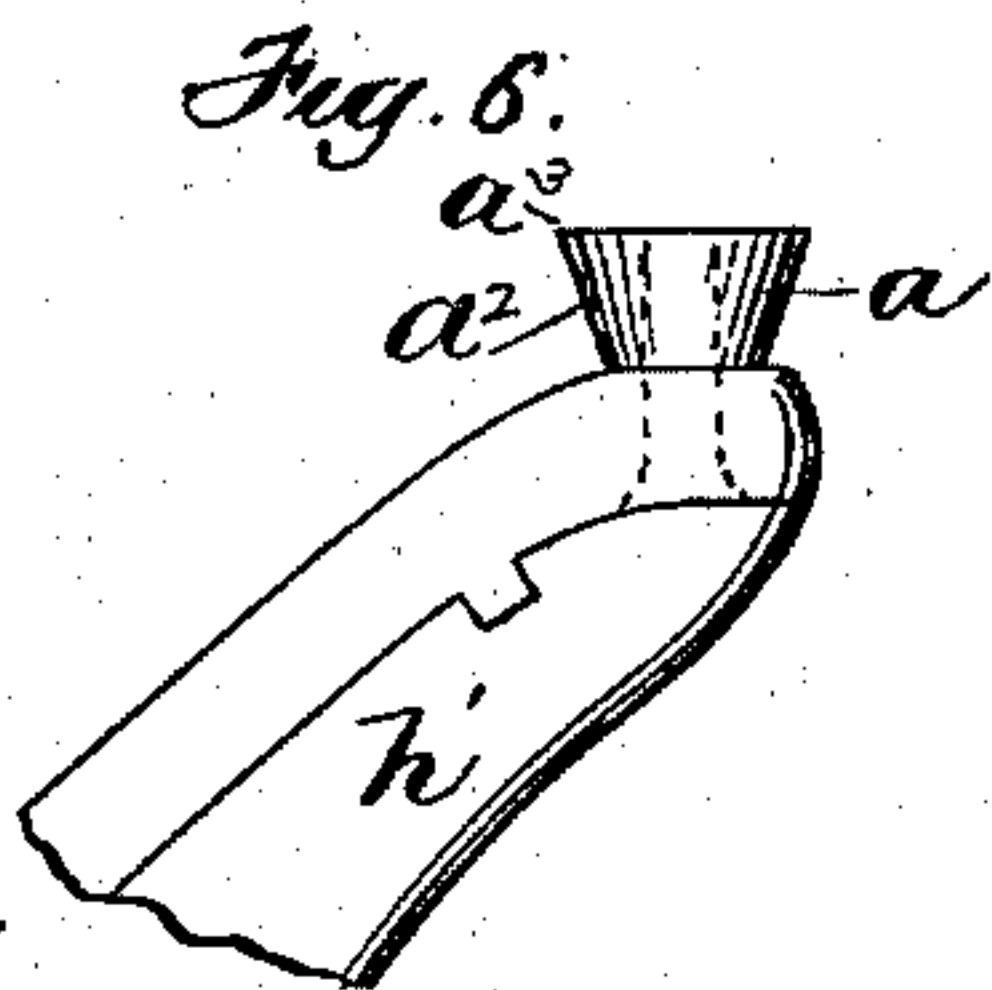
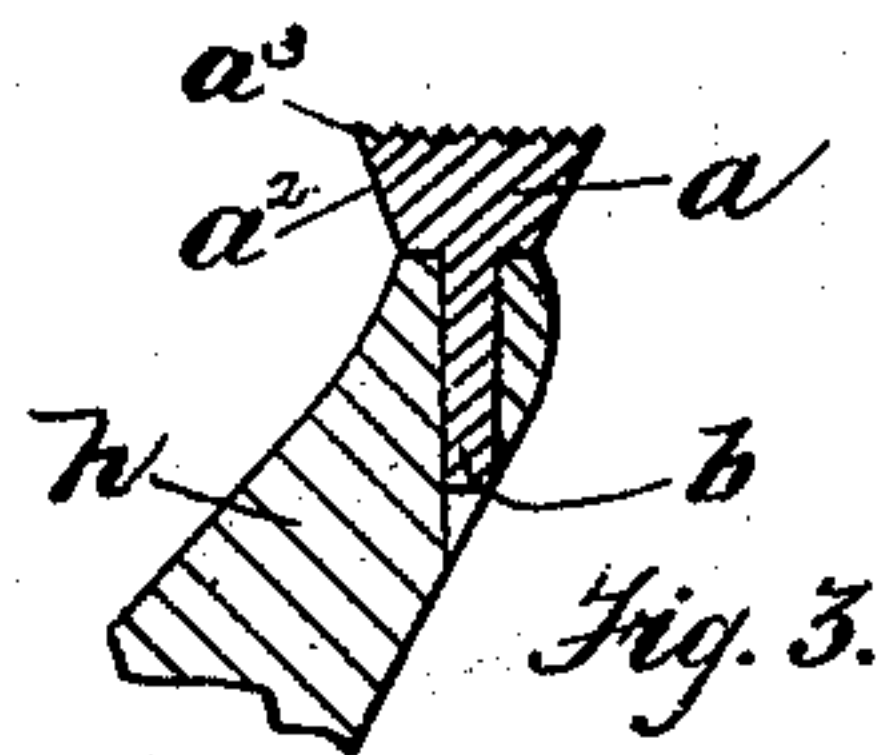
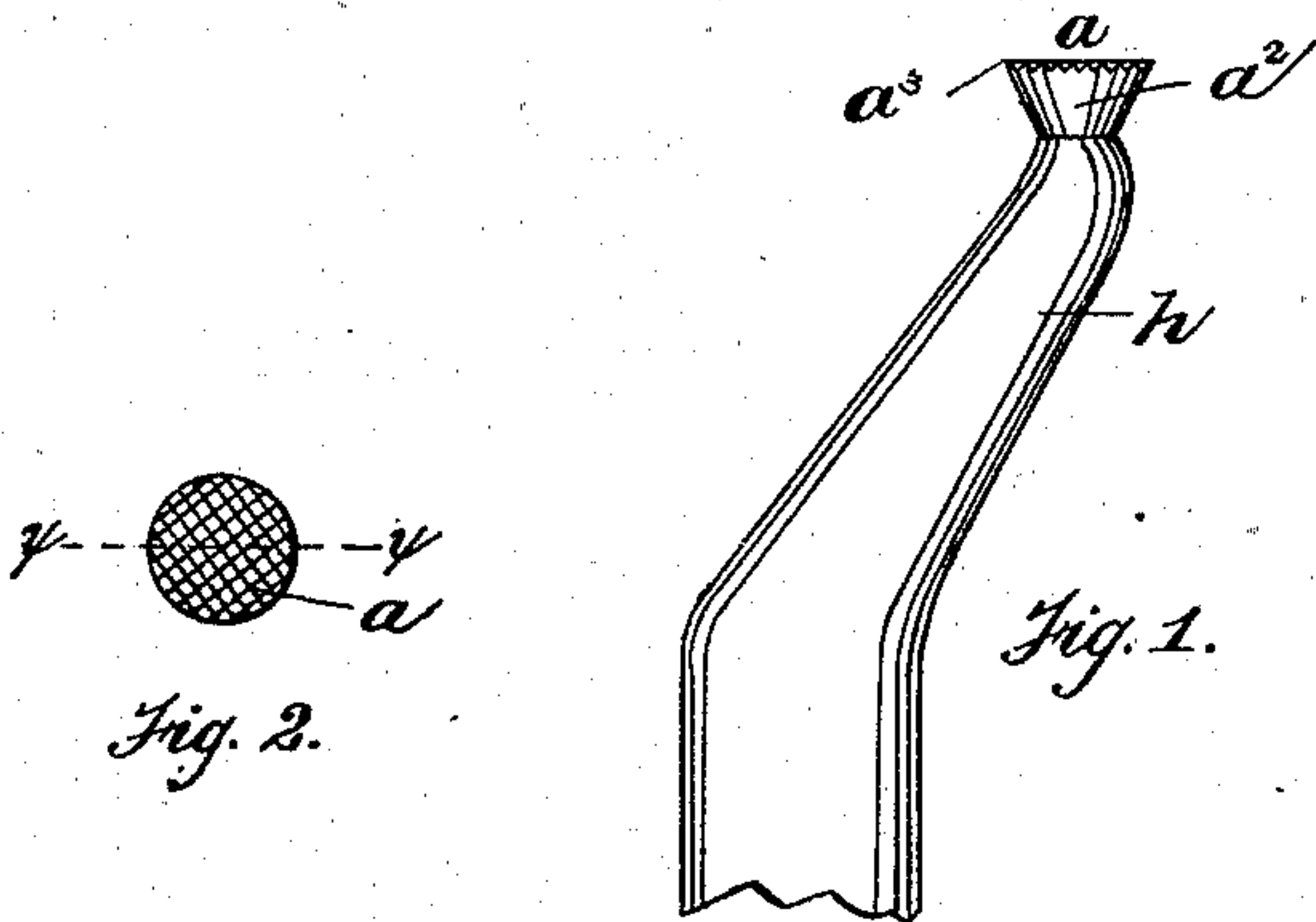
(No Model.)

A. NEWTON.

MANUFACTURE OF BOOTS AND SHOES.

No. 255,009

Patented Mar. 14, 1882.



Witnesses:
L. B. Morrison.
H. G. Madlin.

Inventor:
ARTHUR NEWTON,
by Wright & Brown.
Attys.

UNITED STATES PATENT OFFICE.

ARTHUR NEWTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NEWTON AND HIBBARD MACHINE COMPANY.

MANUFACTURE OF BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 255,009, dated March 14, 1882

Application filed May 31, 1881. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR NEWTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in the Manufacture of Boots and Shoes, of which the following is a specification.

This invention relates to work-supporting horns used in machines for the manufacture of boots or shoes having an outer sole and an inner sole between which the edges of the upper are interposed, said parts being secured together by nails, or by stitches extending through both soles and the interposed edges of the upper. The bottoms of boots and shoes of this class are secured by a machine having a pivoted horn inserted in the boot or shoe and supporting the inner sole, said horn having a clinching-surface or anvil to clinch the nails in a sole-nailing machine, and a whirl and orifice for the passage of the thread to stitch-forming mechanism in a sewing-machine. A type of the last-named machine is found in the McKay sewing-machine.

The invention has for its object to provide certain improvements in the horn of a sole sewing or nailing machine, whereby, when the inner sole is channeled to form a flap upon its upper surface to cover the sole-fastenings, as hereinafter described, said flap may be automatically raised at a point immediately in advance of the point where the sole-fastenings are inserted.

To this end my invention consists in the provision upon the horn of a sole nailing or sewing machine of a channel-opener adapted to raise the above-named flap, and to serve also as the nail-clinching anvil when applied to the horn of a nailing-machine, as I will now proceed to describe.

Of the accompanying drawings, forming part of this specification, Figure 1 represents a side view of the horn of a nailing-machine embodying my invention. Fig. 2 represents a top view of the anvil. Fig. 3 represents a section through the anvil and a portion of the horn on plane of line $x x$, Fig. 2. Fig. 4 represents a section of the shoe before the nails are driven. Fig. 5 represents a similar section,

the shoe being in position on the horn and the nail clinched. Figs. 6 and 7 represent respectively side and top views of the end of the horn of a McKay sewing-machine, showing a channel-opener thereon.

The same letters indicate the same parts in all the figures.

I will first describe my invention with reference to securing the bottom of a boot or shoe by nails.

In the drawings, a represents an anvil-block, forming the upper extremity of a horn, h , of a sole-nailing machine. The anvil-block a is enlarged upon its clinching-surface, and is tapered inwardly or contracted from said surface to its junction with the horn, this tapering of the horn forming the receding sides a^2 , which clear the work and guide the channel-flap aright without unduly reflexing or crimping it, and also forming the angular edge a^3 at the junction of the sides and face, which insures the turning of the flap, as hereinafter specified. The anvil a is in this instance provided with a pivot, b , inserted within a socket formed in the horn h , said pivot enabling the shoe to be moved easily upon the horn in the nailing operation. The anvil, however, may form an integral part of the horn, if desired, without departing from the spirit of my invention. The bearing-surface of the anvil is preferably roughened or corrugated to prevent the work from slipping upon it. The horn h may be of any suitable construction, and is adapted to turn in its support in the usual manner.

In preparing a boot or shoe for the sole-fastening operation the inner sole, i , is channeled laterally from its outer edge to form a marginal flap, f , on its upper surface, which flap is turned back, as shown in Fig. 4, when the lasted shoe is placed upon the horn to allow the anvil-block a to be inserted between the flap f and the upper u , as shown in Fig. 5, thereby exposing the surface of the inner sole under said flap. The nailing operation is then effected in the usual manner, the described shape of the anvil-block a adapting said block to displace the flap f entirely around the shoe as the shoe is fed upon the horn, and to hold the flap

f away from the channel during the nailing operation, thus enabling the nails *n*, when driven through the outer sole, *s*, to be clinched upon the exposed surface of the inner sole under the flap. The flap is afterward turned down and secured in any suitable manner to cover the clinched points of the nails.

In lasting the shoe the lasting-tacks *t* should be driven in the parts of the inner sole inside of the channel, as shown in Fig. 4, so that said lasting-tacks will not interfere with the raising of the flap *f* during the nailing operation.

In carrying out my invention with regard to a boot or shoe sole sewing or stitching machine I provide the horn *h'* of a McKay or other sewing-machine with a channel-opener, *a'*, similar in form to the anvil *a*, as seen in Figs. 6 and 7. This channel-opener is located over the usual whirl and thread-orifice of the horn, and has a central orifice, *o*, through which the thread passes from the horn to the stitch-forming mechanism above.

The function of the channel-opener *a'* is the same as that of the anvil *a* in displacing the flap and exposing the surface of the inner sole. The stitches are laid by the usual operation of the machine upon the exposed surface of the inner sole and are afterward covered by the flap.

The form of the channel-opener may be variously modified without departing from the spirit of my invention. I have found it essential, however, that the supporting-surface of the channel-opener be raised above the horn sufficiently to afford room for the flap to stand out abruptly from the inner sole, as shown in Fig. 5, when displaced by the channel-opener. If a channel-opener not sufficiently raised were used, the flap would be turned back by contact with the horn, so that it could not stand out abruptly from the sole, and the result would be that when the channel-opener is raising the curved portion of the flap at the toe the puck-

ers or waves of the displaced curved portion, due to the increased length of the outer over the inner margin of such curved portion, would cause the flap to form a fold across the surface under the flap, which fold would almost invariably insert itself between the channel-opener and the surface under the flap, and thus cause the flap itself to ride upon the channel-opener without being displaced thereby. The necessary height of the channel-opener above the horn will depend upon the width of the flap. I have found that a channel-opener whose height is equal to about half the width of the flap operates with good results. I prefer to incline the sides of the channel-opener inwardly, so as to form an acute angle at the margin of the work-supporting surface of the channel-opener, said angle being adapted to fit closely in the re-entrant angle formed by the displaced flap and the surface of the sole under the same, and prevent said surface from being moved laterally off from the opener.

I claim—

1. The anvil *a*, having the inwardly and downwardly receding sides *a*², and the enlarged angular edge *a*³, formed by the juncture of the top surface and sides, and adapted to be applied to the horn *h*, substantially as shown, and for the purpose described.

2. In a boot or shoe sole nailing machine the anvil or channel-opener corrugated or roughened on its upper surface, as and for the purpose specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of May, A. D. 1881.

ARTHUR NEWTON.

Witnesses:

C. F. BROWN,
D. B. MORRISON.